Excursion: Applications of Computer Vision

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Organisation of the Excursion

- Excursion topic: Car in-cabin analysis software

- You **have to** visit the excursion to pass the course

emotion3D:

Image taken from: https://emotion3d.ai/
emotion3D GmbH, Rainergasse 1/8, 1040 Vienna, Austria

Organisation of the Excursion

- Excursion date: THU 1.12.2022, 10:00 – 12:00

- We will meet in front of Rainergasse 1/8, 1040 Wien.
  Be there 10 min before the excursion starts.

- After Excursion you have to

  - Create a written report

  - Create a presentation

During the excursion

- If you feel sick contact me (mwoedlinger@cvl.tuwien.ac.at)
- Feel free to ask questions (!!)

Written Report

- **4 pages** per student including references

- No generic „excursion summary"

- Pick a problem related to the excursion.

- What is the problem that needs to be solved?

- How was computer vision used to solve it?

- Enter your topic here and ensure that no one has the same topic: https://docs.google.com/spreadsheets/d/1q6DL91JyV_Efg61riCM PJXDAoHctldECVzaza2QRDM0/edit?usp=sharing

Written Report

- Structure:
  - Introduction
  - Problem statement
  - Solution/discussion of state-of-the-art approaches
  - Conclusion
- Due Dates
  - First draft: 08.01.2023
  - Final report: 23.01.2023

Presentation

- Max **8 min** per person

- Presentation preperation lecture: 16.01.2023

- Due Date: 23.01.2023

Summary of Tasks

- Find and describe computer vision applications
- Present the results
    - Written document (4 pages)
    - Presentation (max. 8 minutes per student)

Schedule

14.11.2022 (today)	**1. Excursion exercise**: Details on excursion, work plan, work flow, preparations
1.12.2022 10:00-12:00	**2. Exkursion exercise**: Excursion to emotion3d
16.01.2023	**3. Excursion exercise**: Discussion of the 1st document, improvements, planning of presentation
23.01.2023	**Final Presentations**: 1 Document submission 1 Presentation submission

DEADLINE 1st DRAFT
08.01.2023
Submission to
mwoedlinger@cvl.tuwien.ac.at

Applications of Computer Vision

BODY METRICS ANALYSIS

Estimation of an occupants' body metrics like: height, weight, arm-length and more.

Images taken from: https://emotion3d.ai/

Applications of Computer Vision

BODY POSE ANALYSIS
Position estimation of all visible and partly occluded body joints of an occupant.

Images taken from: https://emotion3d.ai/

EYE ANALYSIS

Gaze tracking, eye openness, blink rate, PERCLOS and more.

Images taken from: https://emotion3d.ai/

GESTURE RECOGNITION

Recognition of hand and body gestures for eyes-on the road infotainment control.

Images taken from: https://emotion3d.ai/

HEAD POSE ANALYSIS

Position and pose estimation of an occupants head.

Images taken from: https://emotion3d.ai/

OCCUPANCY DETECTION

Detection whether a seat is occupied by a person or not.

Images taken from: https://emotion3d.ai/

Thank you

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https://cvl.tuwien.ac.at/course/applications-of-computer-vision-ex/